Integrating NOAA Resources into your Environmental Education Program

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NOAA Office of Education

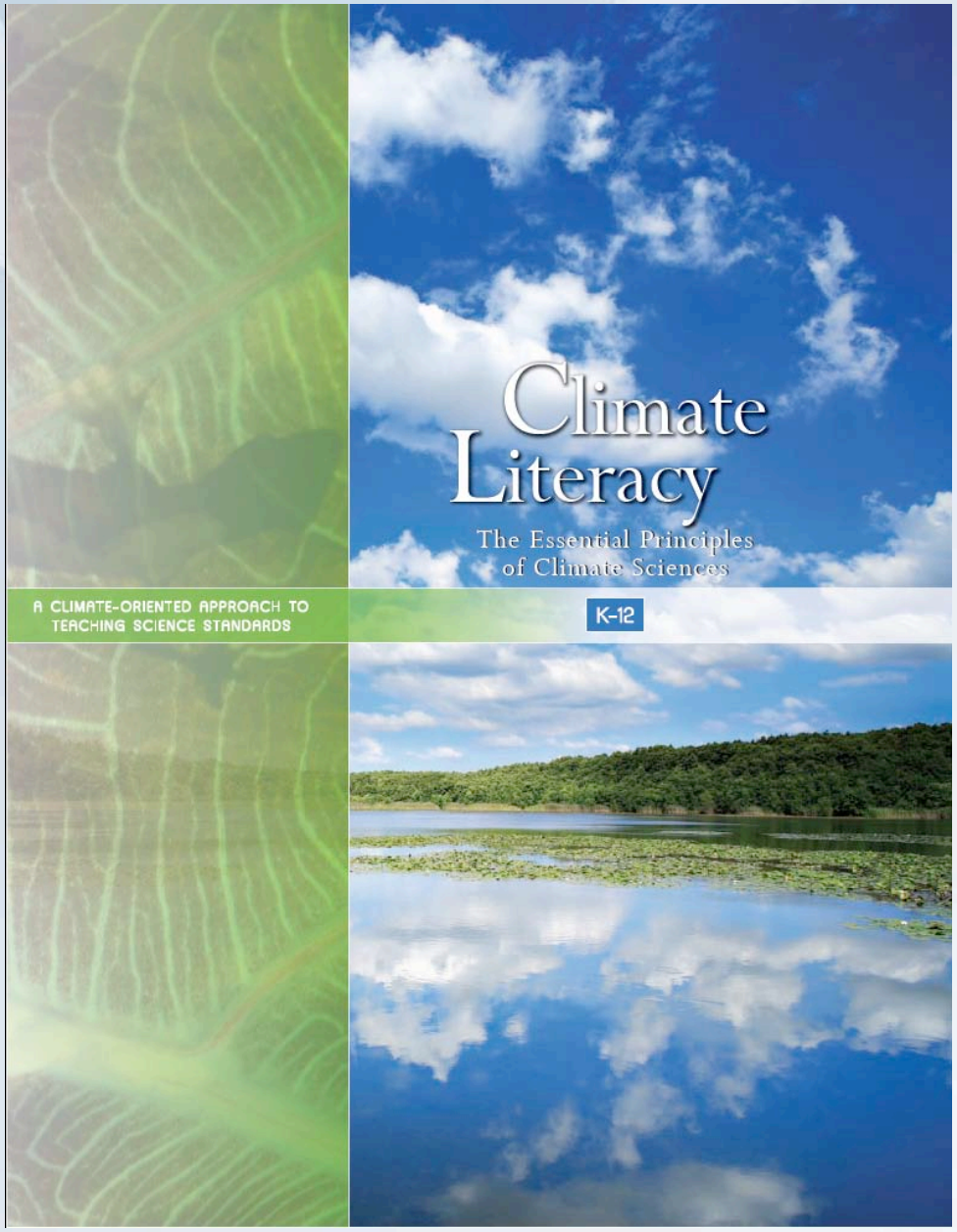
Outline

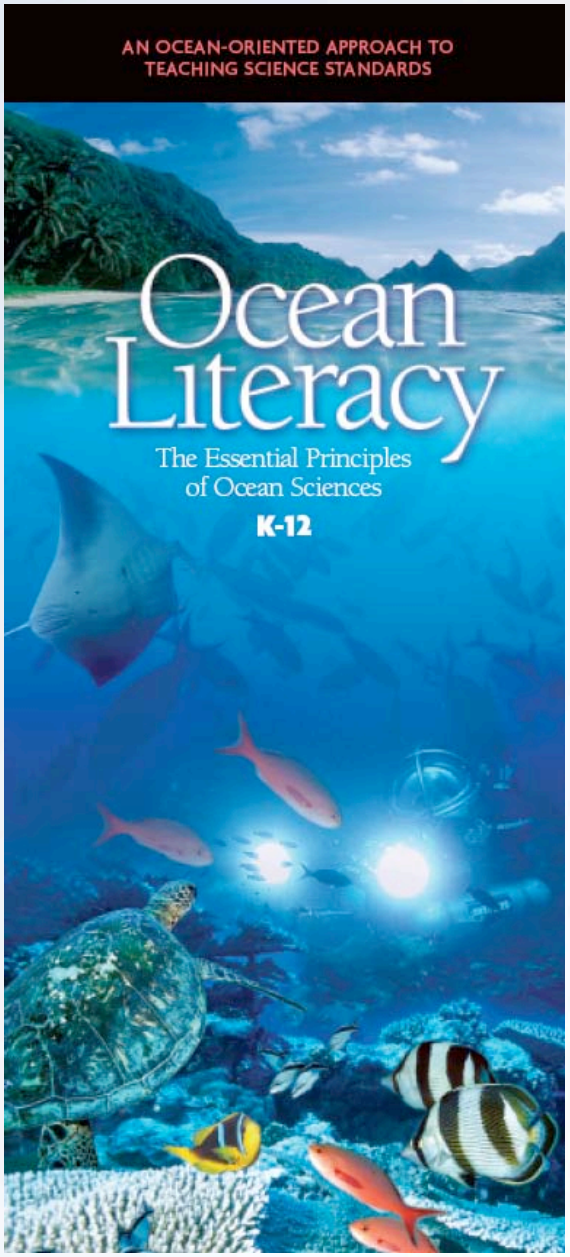
- Introduction to NOAA Education
- Overview of Some Available Resources
- Data in the Classroom: Focus on the NODE Program

What does NOAA offer Teachers?

- Real-time data
- Underwater photos and video – Live!
- Access to current research
- Places near your communities to visit: NERRS/Sanctuaries

Lesson Plans and Curricula that integrate these!


Climate
Literacy
The Essential Principles
of Climate Sciences
A CLIMATE-ORIENTED APPROACH TO
TEACHING SCIENCE STANDARDS
K-12

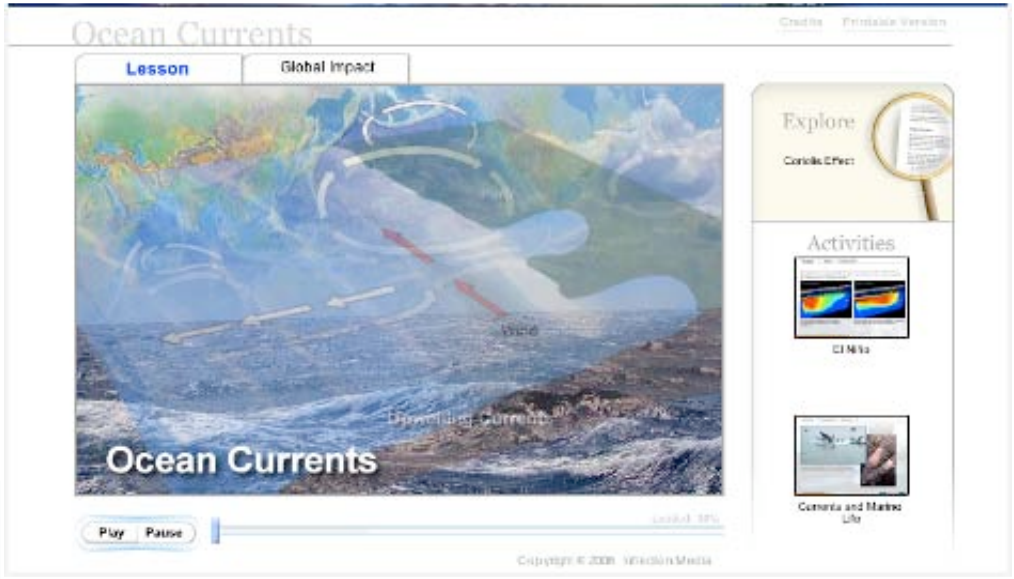

AN OCEAN-ORIENTED APPROACH TO
TEACHING SCIENCE STANDARDS
Ocean
Literacy
The Essential Principles
of Ocean Sciences
K-12

Ocean Explorer

www.oceanexplorer.noaa.gov

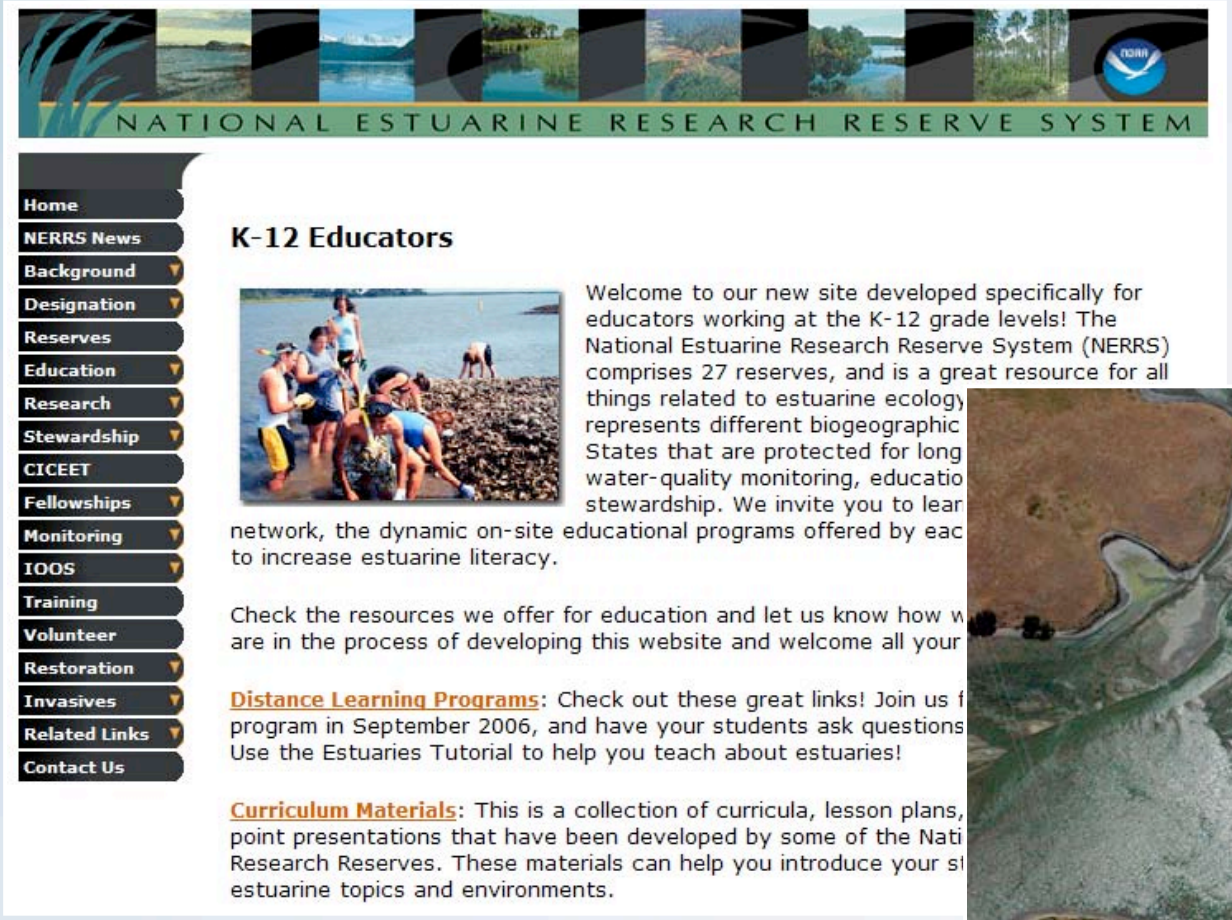
- Educational materials based on expeditions
- Interactive live broadcasts from research cruises

http://www.learningdemo.com/noaa/



NERRS

www.nerrs.noaa.gov/Education/K12Educators.html



- Offer classroom materials and *EstuaryLive!* A field trip over the internet

Elkhorn Slough NERR: www.elkhornslough.org

Sanctuaries

http://sanctuaries.noaa.gov/education/welcome.html

- Downloadable lesson plans
- Encyclopedia of the Sanctuaries (under Photos tab)
- *OceansLive* Portal

Sanctuaries

http://oceanslive.org/portal/

- Downloadable lesson plans
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National Ocean Service (NOS)

http://oceanservice.noaa.gov/education/welcome.html

- Discovery Kits
- Interactive nautical chart lesson
- Web seminars (with NSTA)

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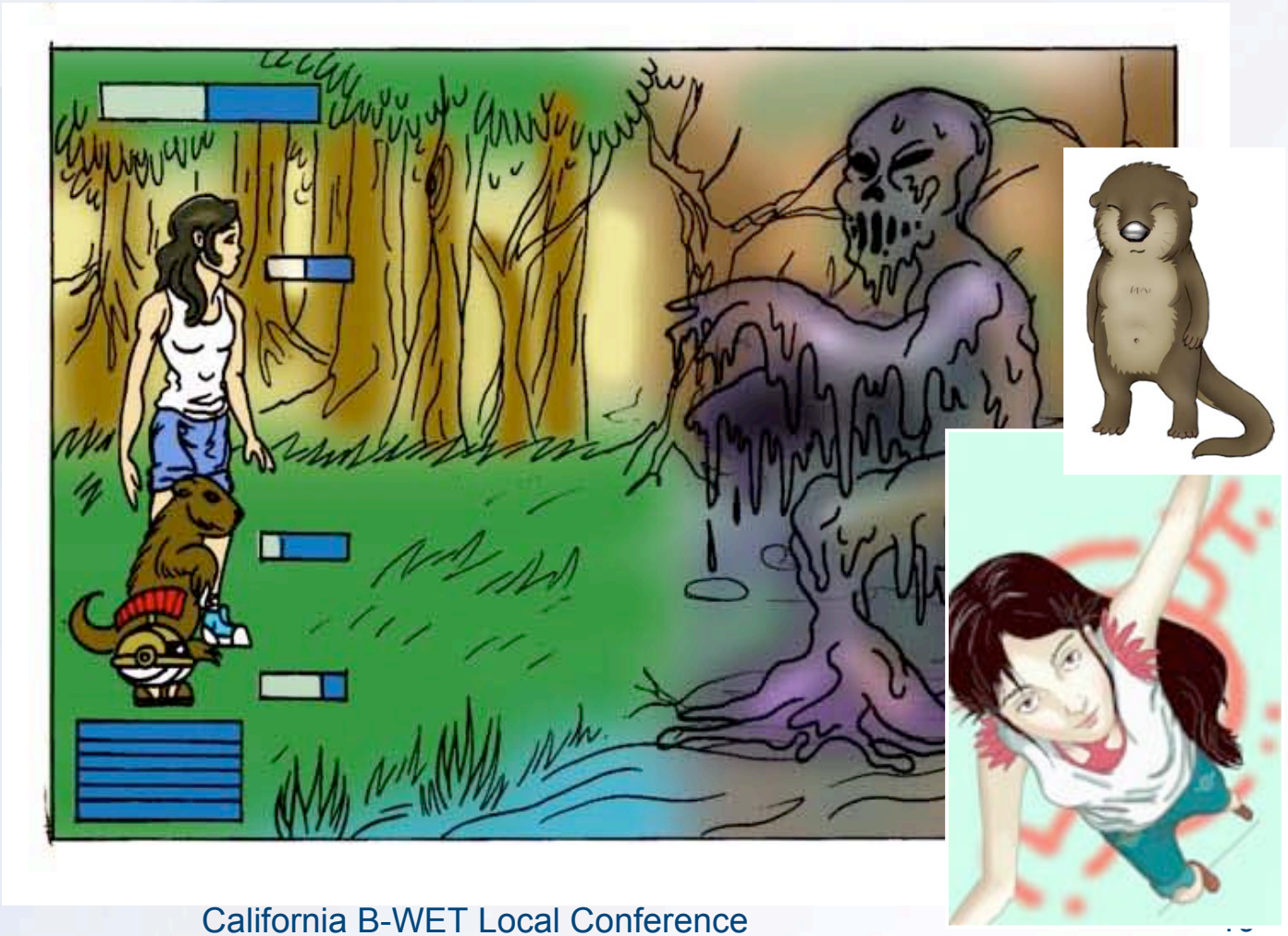
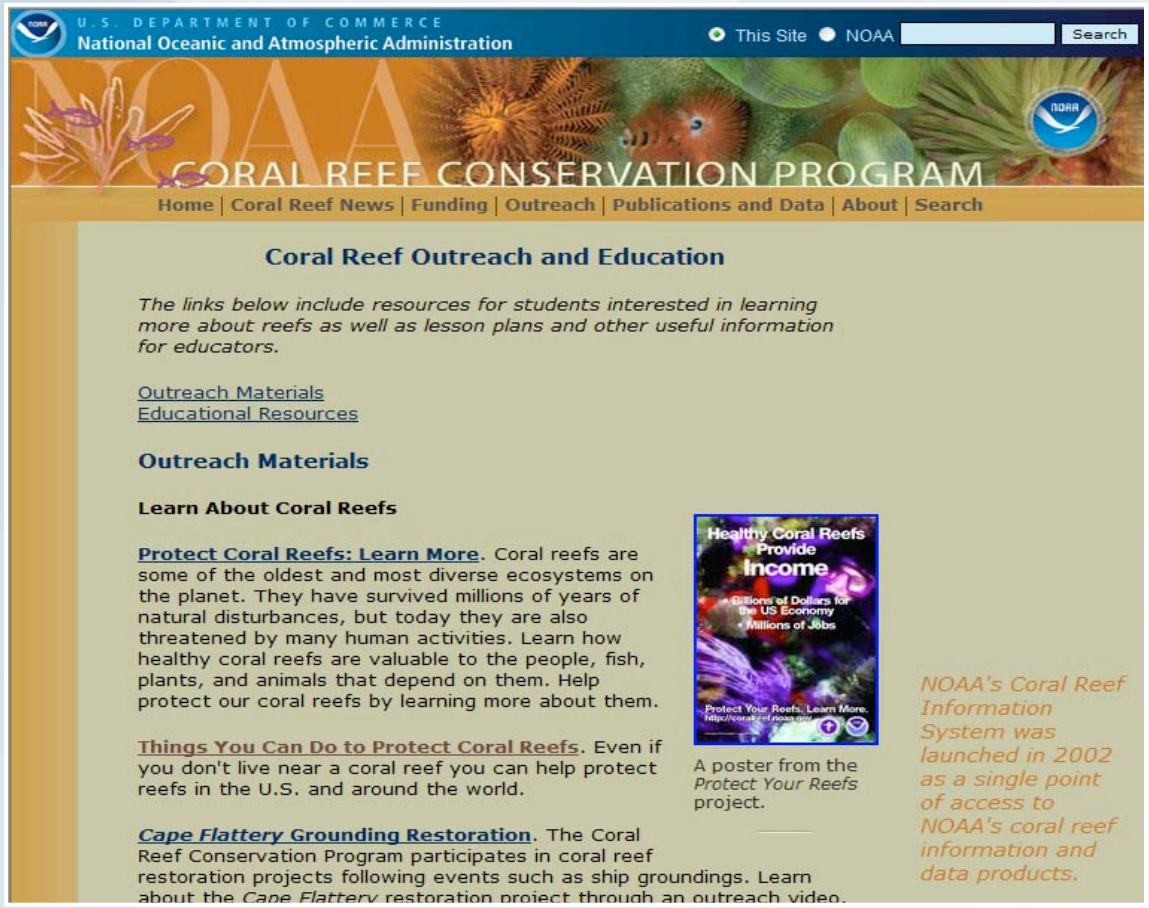
Estuaries

Game!



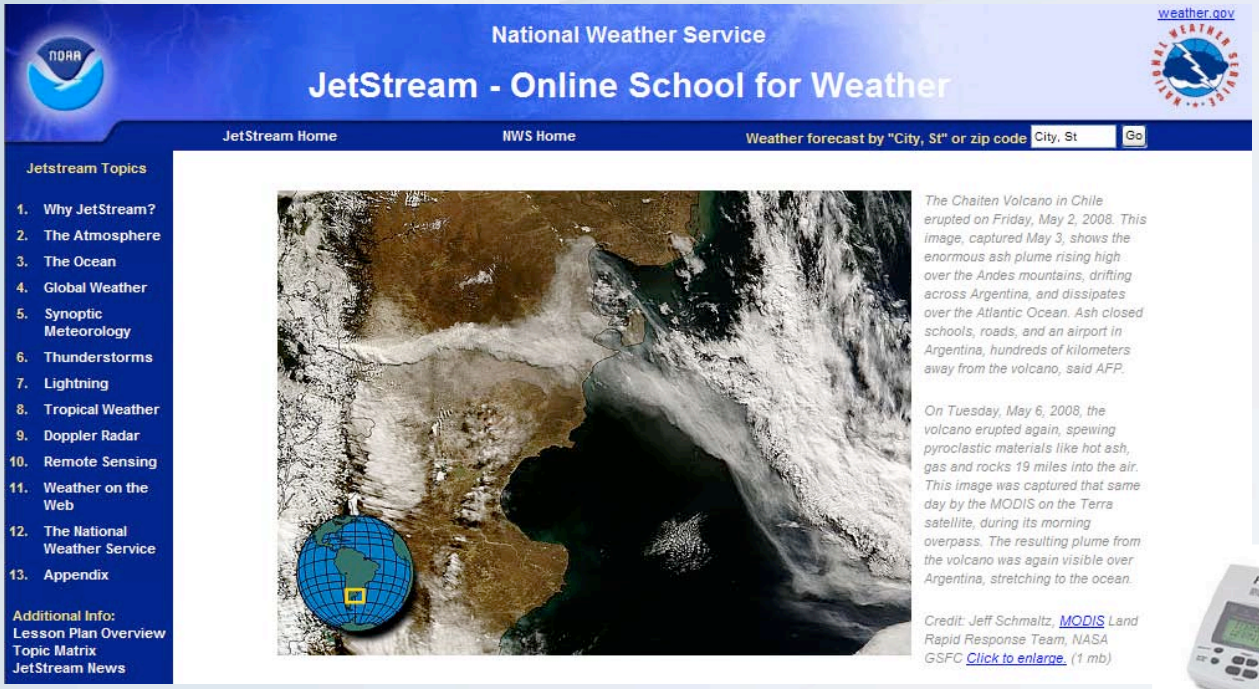
Coral Reef Conservation Program

www.coralreef.noaa.gov/outreach/welcome.html



- NOAA's Coral Reef Information System (CoRIS), a single point of access to NOAA coral reef information and data products
- Coral Reef Discovery Kits

National Weather Service: JetStream



http://www.srh.noaa.gov/jetstream/

- Lesson plans and tutorials on various weather topics
- New Cloud Chart
- NOAA Weather Radio

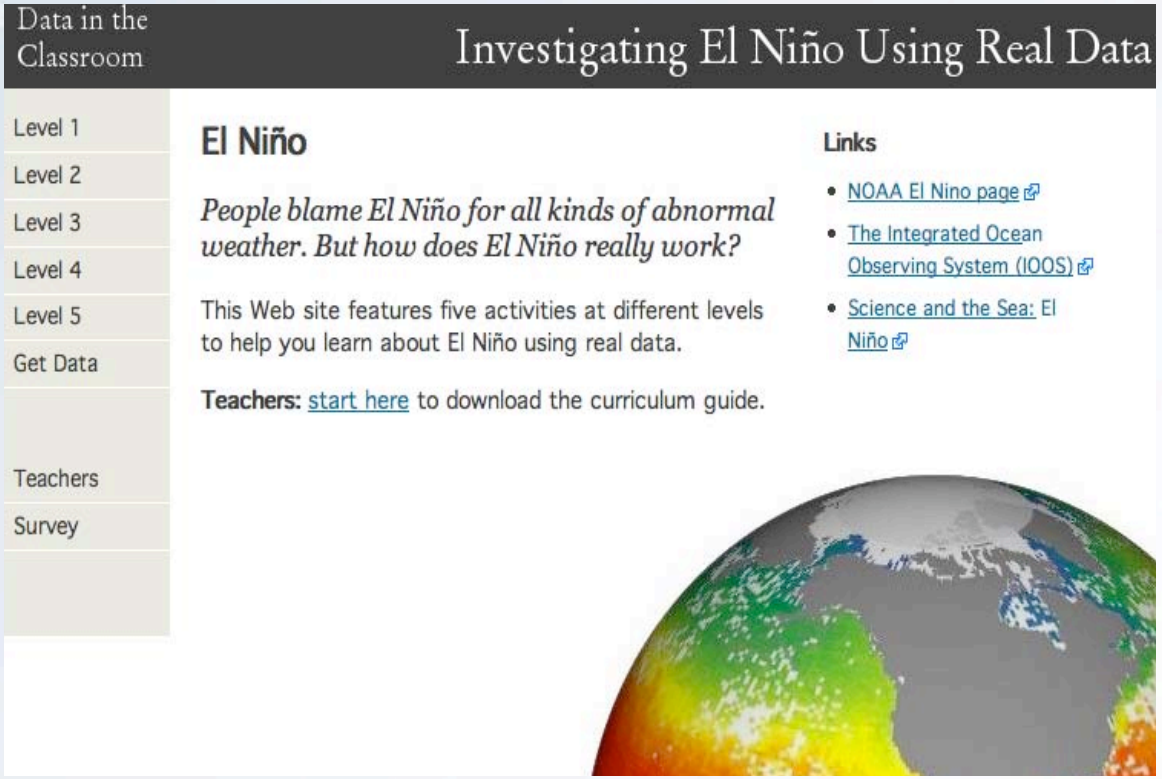
NOAA Data Education Project (NODE)

- A pilot K-12 education project coordinated by Sanctuaries, Estuarine Research Reserves, and NODC
- Three multi-level curriculum modules focused on middle school, grades 5-8
- Web browser-based with student materials available in a downloadable format for printing.
- Accompanied by IOOS data interface, interactive web activities, data visualizations and animations
- Currently undergoing teacher evaluation

NODE: Emphasis on Context & Relevance

- Data sets are *not* presented as stand alone data exploration interfaces
- Presents data through real world issues
- Utilizes the scientific story told by the data to provide context
- Students are using real data and real science

http://www.datainthecassroom.org/



- Correlated to the National Science Standards & National Math Standards

Data in the Classroom

Investigating El Niño Using Real Data

- Level 1
- Level 2
- Level 3
- Level 4
- Level 5
- Get Data

- Teachers
- Survey

Problems?
Contact us

El Niño ▸ Get Data

Which data?

Sea surface temperature

About the data

Which view?

Map (latitude and longitude)

Graph along a line of latitude

Specify a date.

16 Dec 1997

Select an output format.

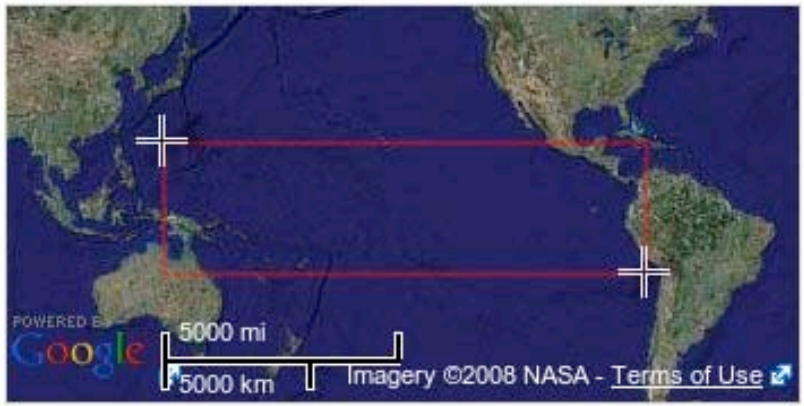
Image

Data file for spreadsheet

Get Data

Select a region.

Click and drag the crosshairs on the map to select the region you wish to display. You may also enter latitude and longitude values directly in the boxes provided.



20 N

135 E

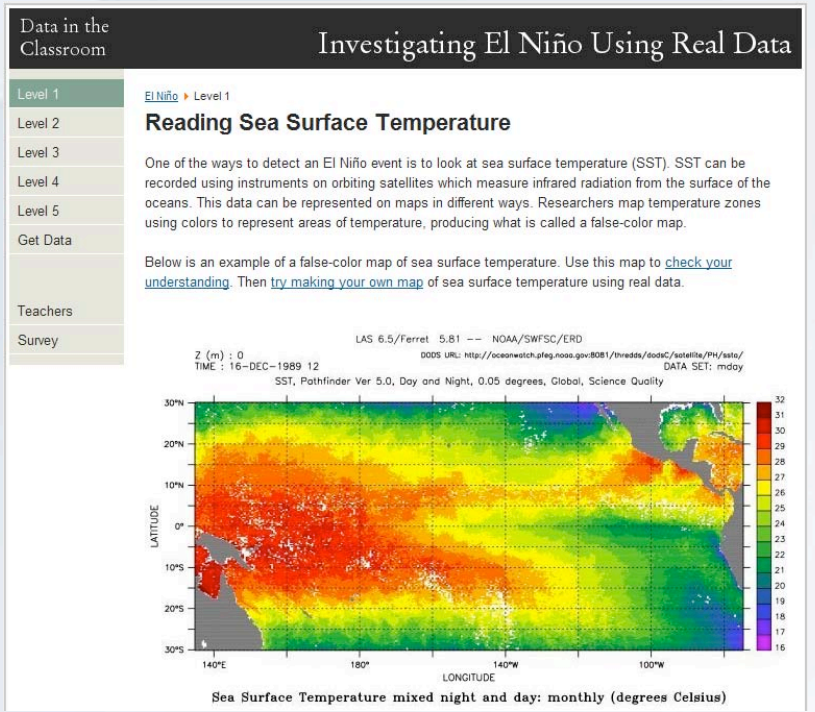
75 W

20 S

Get help using this form.

NODE: El Niño

Levels of Scaled Interaction



Increasing # of data sets & depth of exploration

5 **Invention:** Highest cognitive level. Student driven, full inquiry style

4 **Interactivity:** Students analyze data and discuss findings using problem solving techniques and technology driven tools

3 **Adaptation:** Students use portal tools to play and practice what they know.

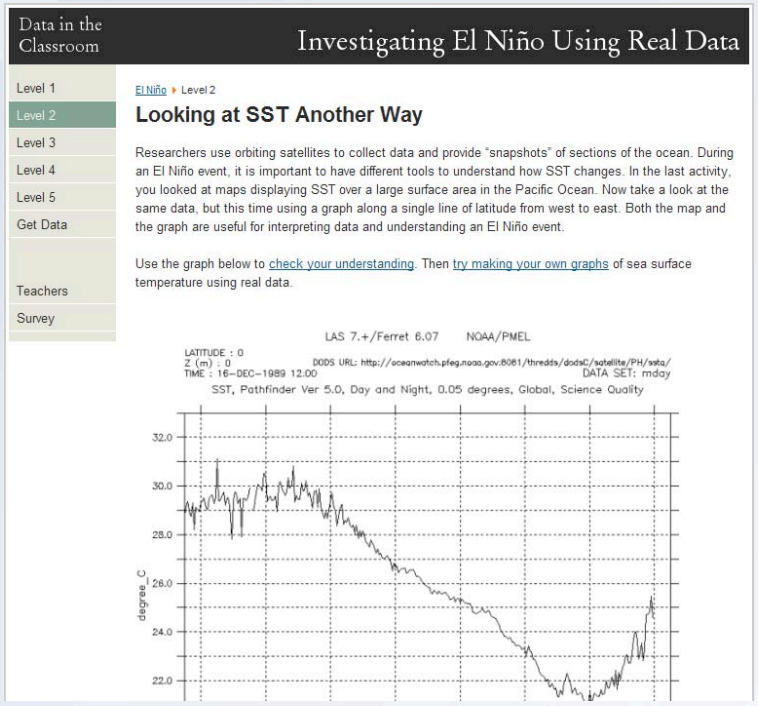
2 **Adoption:** Students use drill and practice using online tools to gather data.

1 **Entry:** Students look at research questions and discover data that helps them understand key principles & concepts.

Builds Data Literacy

NODE: El Niño

Levels of Scaled Interaction



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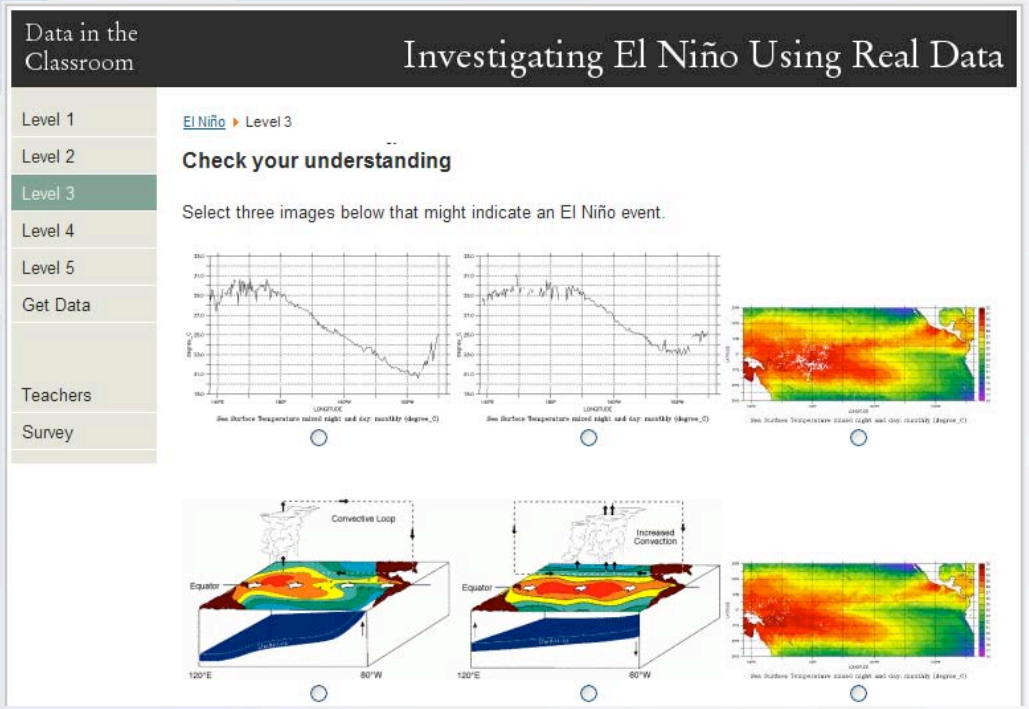

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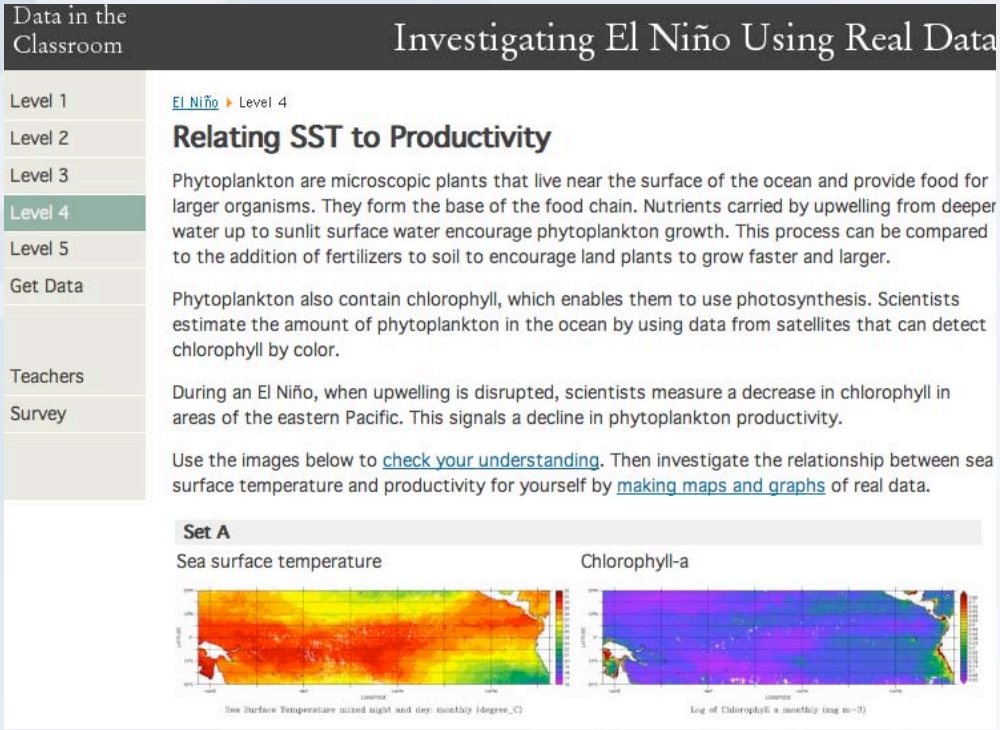

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Builds Data Literacy

Opportunities for Participation

http://www.dataintheclassroom.org/

Thank You!

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